

specifically recites "moving the flap using an electrode disposed in the one or more sidewalls" as stated by the Examiner. Consequently, the claims should not be interpreted as including such a limitation.

5 INFORMATION DISCLOSURE STATEMENT SUBMITTED 9/24/2001

The Applicants had submitted Information Disclosure Statements on August 18, 2001 and September 24, 2001. Although the August 18, 2001 IDS was entered by the Examiner, no mention of the September 24 IDS appears in the 10 Examiner's Office Action. The Applicants are submitting herewith a copy of the September 24, 2001 IDS along with the Express Mail label and transmittal form that accompanied it. A review of the file history case under PAIR indicates that the September 24 IDS was received by 15 the USPTO. The Applicant respectfully requests that the Examiner consider the IDS. The Applicants further submit that no fee or certification is necessary since the IDS was timely submitted.

20 CLAIM OBJECTIONS

The Examiner has objected to claim 27 on the grounds that "stiction" should be --friction-- in line 2. The Applicants contend that the word in question should be "stiction" as it was originally written. The word "stiction" is used consistently in the claims and the specification. See e.g., page 3, line 13; page 8, lines 1, 25 14, 20; page 9, line 30; and page 16, line 13. The word "friction" by contrast does not appear at all in the specification or claims. The Applicants submit that the term "stiction" has a well-known meaning within the art 30 that is distinguishable from the meaning of "friction".

The word --stiction-- generally refers to the tendency of two objects in contact to stick together and resist movement relative to one another. Stiction includes resistance to relative movement in a direction 5 perpendicular to the plane of contact between the two objects. "Friction", by contrast describes forces that resist movement of two objects along a direction parallel to the plane of contact between them. Consequently, the Applicants submit that the claim is not objectionable as it 10 is written. The Applicants therefore respectfully request that the Examiner withdraw the objection.

CLAIM REJECTIONS - 35 USC 102.

The Examiner has rejected claims 26 and 29 under 35 USC 102(e) as being unpatentable over U.S. Patent 6,360,036 to 15 Couillard. (hererinafer Couillard). In rejecting the claims, the Examiner argues that Couillard discloses a MEMS device having a flap (cantilevered arm, Fig. 12, 80_ that is moveable by way of a thermal actuator (claim 3, line 2), a piezoelectric actuator (claim 4, line 2) or an 20 electrostatic actuator (claim 5, line 2), with respect to a base (Fig. 12, 30).

The Applicants respectfully traverse the rejection. In rejecting the claims the Examiner has pointed to no teaching in Couillard, or any other reference, of all the 25 limitations of claim 26. Absent such a showing, the Examiner has not met her burden of showing that Couillard teaches every limitation of the rejected claim (see MPEP 2131). Furthermore, the Applicants submit that Couillard does not teach or suggest operating a MEMS device having a 30 flap by "applying a pre-bias force to the flap to move the

flap at least partially out of contact with an *underlying base*" as recited in claim 26. Instead, Couillard teaches moving the cantilever arm 80 downward to disengage it from latching arm 90. Note that even in the latched position 5 shown by Couillard in Fig. 12 no part of the cantilever arm is in contact with the base 30. If the cantilever arm 80 doesn't touch the base 30 it cannot be moved *out of contact with an underlying base* as recited in claim 26. Thus Couillard fails to teach every limitation of claim 26 and 10 therefore, claim 26 defines an invention suitable for patent protection.

Furthermore, claim 29 depends directly from claim 26 and recites additional features therefor. As such, and for the same reasons set forth above, the Applicants submit that 15 claim 29 defines an invention suitable for patent protection.

CLAIM REJECTIONS - 35 USC 103.

The Examiner has rejected claims 27-31 under 35 USC 103(a) as being unpatentable over Couillard. In rejecting the 20 claims, the Examiner states that Couillard fails to disclose that the force produces a biasing torque on the flap wherein the torque tends to counteract another torque exerted on the flap. The Examiner argues that, although not disclosed, it is known that if a force acts on the 25 flap, torque is exerted and in response to the original torque, a biasing torque occurs. The Examiner concludes that one skilled in the art would recognize that a biasing torque would exist on the flap due to the torque introduced by the pre-bias force.

The Applicants respectfully traverse the rejection on the grounds that the Examiner has not met her burden of establishing a *prima facie* case of obviousness. Claims 27-31 depend, either directly or indirectly, on claim 26 and 5 recite additional features therefore. As stated hereinabove, the Applicants contend that Couillard does not teach or suggest all the limitations of claim 26. Specifically, Couillard does not teach or suggest operating a MEMS device having a flap by "applying a pre-bias force 10 to the flap to move the flap at least partially out of contact with an *underlying base*" as recited in claim 26. In the absence of such a teaching, the Applicants submit that no combination of Couillard with skill in the art teaches all the limitations of independent claim 26 or 15 dependent claims 27-31. As such, a *prima facie* case of obviousness is not present and claims 26-31 define an invention suitable for patent protection.

Therefore, the Applicants submit that claims 27-31 are unobvious over Couillard and define an invention suitable 20 for patent protection.

In addition, with respect to claims 27, 28, 30 and 31, the Applicants submit that the biasing torque does not arise in response to the original torque caused by the biasing force. Instead, the biasing torque is the original torque 25 caused by the *biasing force*. Furthermore, not all forces produce torques. For a given axis of rotation any force directed along a line that intersects the axis will produce zero torque about that axis. Even if this is generally known, the Applicants submit that the Examiner has pointed 30 to no combination of Couillard with skill in the art that

teaches or suggests operating a MEMS device having a flap by applying a pre-bias force to a flap to move the flap at least partially out of contact with an *underlying base*, "wherein the pre-bias force produces a *biasing torque*" as 5 recited in claims 27, 28, 30 and 31. Therefore, for at least this additional reason, the Applicants submit that claims 27, 28, 30 and 31 are unobvious over Couillard and define an invention suitable for patent protection.

CONCLUSION

10 The Applicants respectfully request entry of the amendment prior to consideration of the application and that the Examiner point out the allowable material in the next office action.

15 Respectfully submitted,

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